

Assignment no. 02 A

PROBLEM STATEMENT:

Game Development:

write a game development program that implements the Bubble Sort algorithm. The program will simulate a simple game where the player can input a set of numbers, and the numbers will be sorted using Bubble Sort to simulate a "level-up" scenario where the player's scores are sorted in ascending order.

Code

```
#include<iostream>
using namespace std;

int main() {
    int i,j,n=5,temp;
    int score_1[5];
    int score_2[5];
    cout<<"Enter the score_1: ";
    for(i=0;i<n;i++){
        cin>>score_1[i];
    }
    // Bubble sort algorithm in descending order for score_1
    for(i=0;i<n-1;i++){
        for(j=0;j<n-i-1;j++){
            if(score_1[j] < score_1[j+1]){
                temp = score_1[j];
                score_1[j] = score_1[j+1];
                score_1[j+1] = temp;
            }
        }
    }
    cout<<"Sorted score_1: ";
    for(i=0;i<n;i++){
        cout<<score_1[i]<<" ";
    }
}
```

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    }
    cout<<endl;
    cout<<"Enter the score_2: ";
    for(i=0;i<n;i++){
        cin>>score_2[i];
    }
    // Bubble sort algorithm in descending order for score_2
    for(i=0;i<n-1;i++){
        for(j=0;j<n-i-1;j++){
            if(score_2[j] < score_2[j+1]){
                temp = score_2[j];
                score_2[j] = score_2[j+1];
                score_2[j+1] = temp;
            }
        }
    }
    // Displaying the sorted scores
    cout<<"Sorted score_1: ";
    for(i=0;i<n;i++){
        cout<<score_1[i]<<" ";
    }
    cout<<endl;

    cout<<"Sorted score_2: ";
    for(i=0;i<n;i++){
        cout<<score_2[i]<<" ";
    }
    cout<<endl;
    //comparing their 0th position scores to declare the result
    cout<<"Comparing the scores to declare the result: "<<endl;
    cout<<"Player 1[0] = "<<score_1[0]<<endl;
    cout<<"Player 2[0] = "<<score_2[0]<<endl;
    // Declare the winner based on the first element of the sorted
arrays
    cout<<"Result: ";

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    if(score_1[0] > score_2[0]){
        cout<<"Player 1 is Winner"<<endl;
    } else if(score_1[0] < score_2[0]){
        cout<<"Player 2 is Winner"<<endl;
    } else {
        cout<<"Since the scores are equal."<<endl;
        cout<<"Match is tied between both the playes!"<<endl;
    }
    return 0;
}

```

Output

```

PS C:\Users\DELL\Desktop\practice\vscode> cd "c:\Use
; if ($?) { .\ds }
Enter the score_1: 54 67 80 89 90
Sorted score_1: 90 89 80 67 54
Enter the score_2: 54 56 78 89 76
Sorted score_1: 90 89 80 67 54
Sorted score_2: 89 78 76 56 54
Comparing the scores to declare the result:
Player 1[0] = 90
Player 2[0] = 89
Result: Player 1 is Winner
PS C:\Users\DELL\Desktop\practice\vscode> cd "c:\Use
; if ($?) { .\ds }
Enter the score_1: 65 78 78 90 87
Sorted score_1: 90 87 78 78 65
Enter the score_2: 99 87 54 34 56
Sorted score_1: 90 87 78 78 65
Sorted score_2: 99 87 56 54 34
Comparing the scores to declare the result:
Player 1[0] = 90
Player 2[0] = 99
Result: Player 2 is Winner
PS C:\Users\DELL\Desktop\practice\vscode> cd "c:\Use
; if ($?) { .\ds }
Enter the score_1: 90 87 56 78 54
Sorted score_1: 90 87 78 56 54
Enter the score_2: 90 87 24 56 78
Sorted score_1: 90 87 78 56 54
Sorted score_2: 90 87 78 56 24
Comparing the scores to declare the result:
Player 1[0] = 90
Player 2[0] = 90
Result: Since the scores are equal.
Match is tied between both the playes!
PS C:\Users\DELL\Desktop\practice\vscode> █

```